

Environmental Protection Agency

Emission Factor Evaporative System **Pressure Check Procedure**

This procedure is written for the Environmental Protection Agency, National Vehicle and Fuel Emissions Laboratory (NVFEL) internal use. The use of specific brand names by NVFEL in this procedure are for reference only and are not an endorsement of those products. This document may be used for guidance by other laboratories.

NVFEL Reference Number

001B

Implementation Approval

Original Procedure Authorized by EPCN #147 on 08-25-92

Revision Description

- (1) 09-30-94 The purpose of this change is to revise the procedure as described in EPCN #170.

Table of Contents

1. Purpose..... 3

2. Test Procedure..... 3

3. Acceptance Criteria 5

Attachments

Attachment A, EF Form 1002-01..... 6

1. Purpose

The purpose of this procedure is to document the steps required to perform an Evaporative System Pressure Check on an Emission Factor (EF) test vehicle.

The pressure check procedure is designed to ensure the integrity of the vehicle's fuel vapor collection system.

EF Form 1002-01 is to be used with this procedure (see Attachment A).

2. Test Procedure

100 Complete TP 702, Vehicle Fuel Exchange.

101 On EF Form 1002-01, record the Vehicle ID # and Test #.

102 Locate the fuel cap and fuel filler neck. Inspect and document their condition on EF Form 1002-01.

If any problems are encountered about the condition of the test vehicle, contact the EF Contract Officer and proceed to Step 109.

103 Locate the vehicle's canister and document its condition as described below on EF Form 1002-01.

If the canister and hose condition are acceptable, check the canister and hose condition OK line under visual inspection.

If you are unable to access the canister, check the canister inaccessible line under visual inspection..

Proceed to Step 109.

If the vehicle fuel tank vapor line is not connected to the canister, check the canister disconnected line under visual inspection, and proceed to Step 105.

Do not reconnect the fuel tank vapor line to the canister after the pressure test.

104 Disconnect the fuel tank vapor line from the canister by loosening the hose clamp (if used).

Note: If a vacuum valve is present, you must bypass it to perform an accurate pressure test. Connect the nitrogen system to the hose that is between the fuel tank and the vacuum valve.

105 Connect the line from the nitrogen pressure check system to the fuel tank line.

There are four nitrogen pressure check systems in the fuel bay.

They can be identified by the pressure meter labeled "Capsuhelic."

If the fitting on the nitrogen pressure check system doesn't fit the fuel line, try another fitting from a different system.

Note: There are 3 valves that control the flow of nitrogen in the system. The two that are mounted above the meter that control the gas flowing into the vehicle, and the valve below the meter is used to bleed gas from the system.

106 Pressurize the fuel tank to 14.5 ± 0.5 inches of H₂O. To accomplish this, the valves may have to be activated many times, depending on the size of the gas tank.

Note: If the vehicle fuel system cannot be pressurized to 14.0 inches of H₂O, determine the cause.

If the problem is found to be a loose fuel cap or loose fuel line hose, document the condition, make the repair, inform the EF project officer, and repeat the test.

107 After reaching the desired pressure, close the valves.

108 On EF Form 1002-01, under Test Results, record the pressure at the start of the test, at 1 minute into the test, and at 2 minutes into the test.

If after 2 minutes the pressure is less than 8.0 inches of H₂O, check the fuel cap and all fittings to ensure they are tight.

If not, document their condition under Comments, perform the necessary repair and repeat the test starting at Step 106.

A vehicle fails the pressure check if the final pressure is less than 8.0 inches of H₂O after 2 minutes.

If the pressure test fails twice, repeat the test using another nitrogen pressure check system.

If the vehicle fails using a second system, contact the EF Project Officer.

109 On EF Form 1002-01, under Test Results, select whether the vehicle passed, failed, or was not tested.

- 110 Release the fuel tank pressure by slowly unscrewing the fuel cap from the filler neck.

When you no longer register pressure on the nitrogen gauge, re-cap the fuel tank.

- 111 Disconnect the nitrogen line and reconnect the vehicle fuel tank line to the canister or to the vacuum valve line (unless the fuel line was not connected to the canister prior to the start of the test).

Note: If the fuel line hose was affixed to the canister with a hose clamp and was removed in Step 104, return the hose clamp to its proper position.

- 112 Identify the canister purge line and label it "Purge."

- 113 On EF Form 1002-01, record your EPA ID. # and date.

- 114 Place EF Form 1002-01 on the clipboard.

3. Acceptance Criteria

The following criteria must be met for the test to be valid:

- 3.1 The vehicle fuel system must be pressurized to 14.5 ± 0.5 inches of H_2O .
- 3.2 The vehicle tank vapor canister lines must remain connected during fueling unless the line was disconnected prior to the start of the test.
- 3.3 The vehicle fuel tank line must be disconnected from the canister during the pressure check and reconnected after the test, unless the line was disconnected prior to the start of the test.
- 3.4 The EF project officer must be notified of pressure check test failure and/or hardware problems with the vehicle

Attachment A

EF Evaporative System Inspection

Vehicle ID. #: _____ Test Number: _____

System Pressure Check:**Visual Inspection:**

- _____ Fuel Cap Present
- _____ Fuel Cap Missing
- _____ Filler Neck Damaged
- _____ Canister and hose condition OK
- _____ Canister Inaccessible
- _____ Canister Disconnected from the fuel tank vapor line
- _____ Hose Lines Frayed

Test Results:Start: _____ inH₂O (14.5 ±0.5 inches) 1 Min: _____ inH₂O 2 Min: _____ inH₂ORetest: _____ inH₂O (14.5 ±0.5 inches) 1 Min: _____ inH₂O 2 Min: _____ inH₂O

- _____ Pass Specification > 8 inH₂O after 2 minutes
- _____ Fail Specification • 8 inH₂O after 2 minutes
- _____ Not Tested

Comments: _____
_____**Signatures:**

I have performed all the steps in accordance with the requirements of Working Procedure 01.

Technician ID #: _____ Date: _____

The data entries are accurate and meet the requirements of Working Procedure 01.

Verified by: _____ Date: _____

Purge Flow Check:

Flow at Idle: _____ L per minute 2500 rpm _____ L per minute

Cumulative: _____ L during IM 240 cycle.

- _____ Pass
- _____ Fail
- _____ Not Tested

Comments: _____

Signatures:

I have performed all the steps in accordance with the requirements of Working Procedure 01.

Technician ID #: _____ Date: _____

The data entries are accurate and meet the requirements of Working Procedure 01.

Verified by: _____ Date: _____